Big Bang

Power Amplifiers

SpeakerCraft®

BB50-S

Owner's Manual

SAFETY INSTRUCTIONS

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

- **Explanation of Graphical Symbols**

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

APPLICABLE FOR USA, CANADA OR WHERE APPROVED FOR USAGE
CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE PLUG TO WIDE SLOT, INSERT FULLY.
ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU AU FOND.

1. **Read Instructions -** All the safety and operating instructions should be read before the appliance is operated.

2. **Retain Instructions -** The safety and operating instructions should be retained for future reference.

3. **Heed Warnings -** All warnings on the appliance and in the operating instructions should be adhered to.

4. **Follow Instructions -** All operating and other instructions should be followed.

5. **Water and Moisture -** The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

6. **Carts and Stands -** The appliance should be used only with a cart or stand that is recommended by the manufacturer.

PORTABLE CART WARNING

7. **Wall or Ceiling Mounting -** The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.

8. **Ventilation -** The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

9. **Heat -** The appliance should be situated away from heat sources such as radiators, stoves, or other appliances that produce heat.

10. **Power Source -** The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

11. **Power-Cord Protection -** Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

12. **Cleaning -** The appliance should be cleaned only as recommended by the manufacturer.

13. **Nonuse Periods -** The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

14. **Object and Liquid Entry -** Care should be taken so that objects do not fall into and liquids not spilled into the inside of the appliance.

15. **Damage Requiring Service -** The appliance should be serviced by qualified service personnel when:

    a. The power-supply cord or the plug has been damaged; or

    b. Objects have fallen onto, or liquid has been spilled into the appliance; or

    c. The appliance has been exposed to rain; or

    d. The appliance does not appear to operate normally or exhibits a marked change in performance; or

    e. The appliance has been dropped, or the cabinet damaged.

16. **Servicing -** The user should not attempt to service the appliance beyond those means described in the operating instructions. All other servicing should be referred to qualified service personnel.

17. **Grounding or Polarization -** The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.

Thank you for purchasing the SpeakerCraft BB50-S power amplifier. Before proceeding with your installation, please review Diagrams 1 & 2 on pages 4-5 to familiarize yourself with the functions and features of the BB50-S.

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DIAGRAM 1: Front Panel Detail

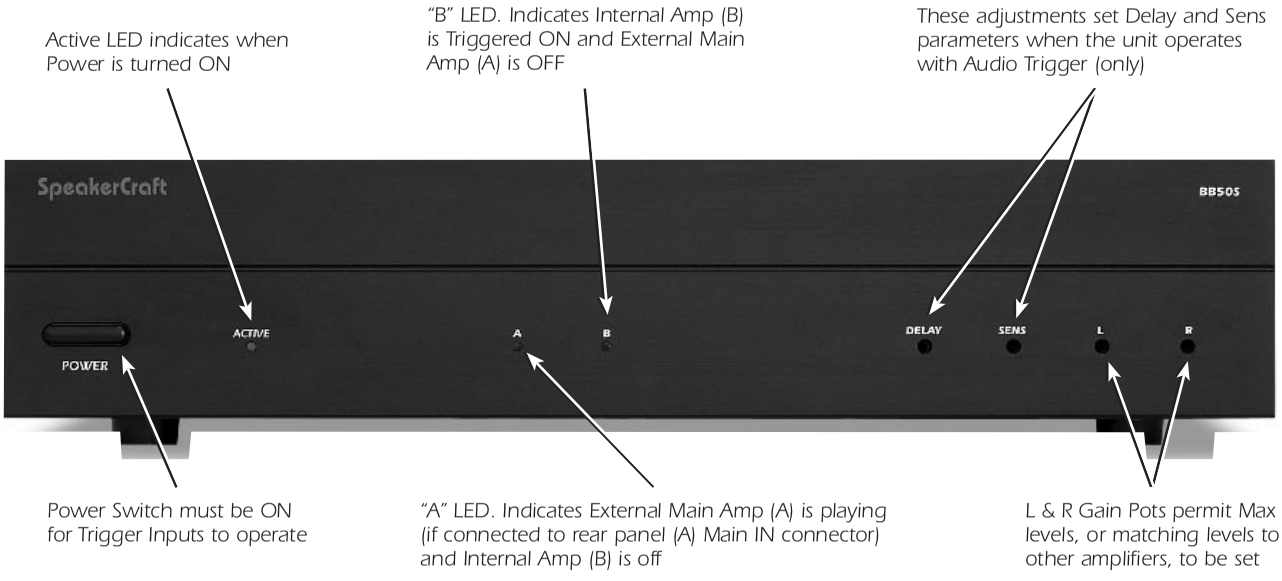
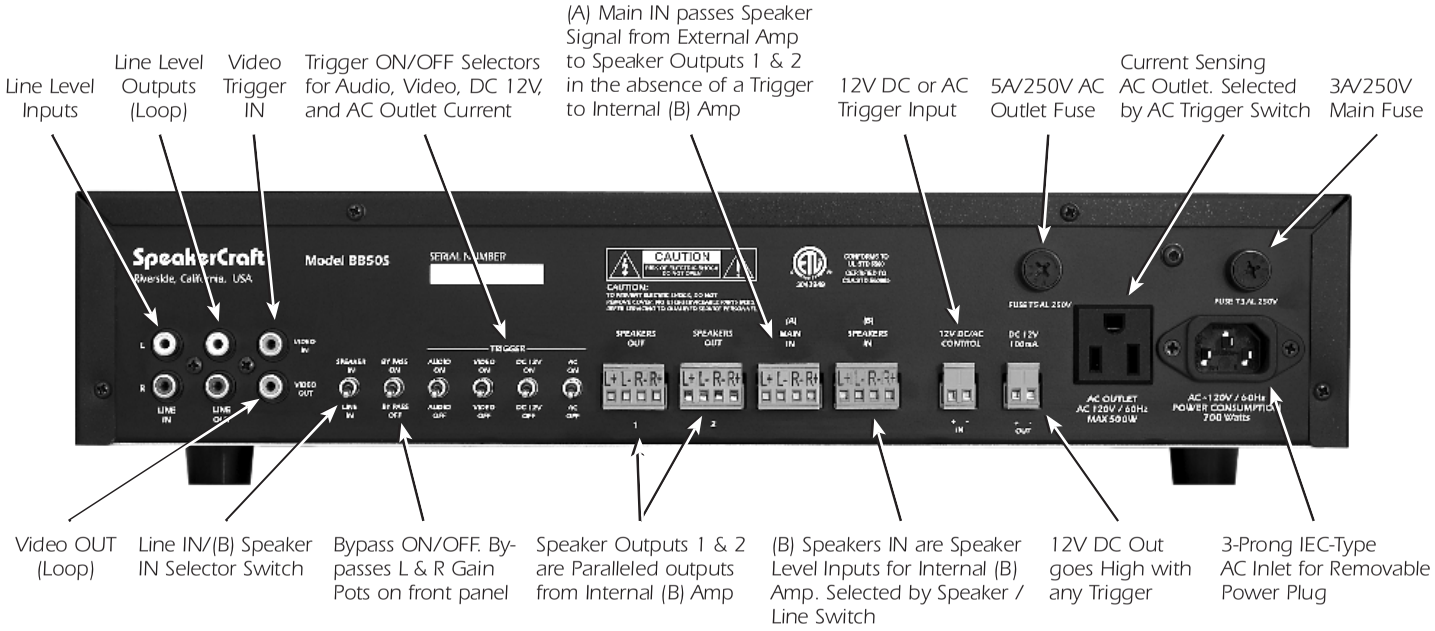


DIAGRAM 2: Rear Panel Detail



INSTALLATION CONSIDERATIONS

DO:

- Place the BB50-S with the feet resting on a solid flat level surface.
- Place the BB50-S in a well-vented area to provide proper cooling. Allow at least 4" of space above the amplifier. In areas that lack proper ventilation, such as tight cabinets or racks, it may be necessary to install small fans to create air movement.

DON'T:

- Obstruct the ventilation holes on the top or bottom of the BB50-S. Never place it on carpeting or similar material.
- Place the BB50-S in any other position other than horizontal with the feet down. Never place on its side or resting on the back where the terminals are located.
- Place the BB50-S near heat sources, or in an area that it would be exposed to moisture.

YOU SHOULD KNOW:

- The power supply is very large and therefore may cause a hum to be heard in some components if they are placed very close to the BB50-S.

INPUTS AND OUTPUTS

LINE IN Jacks

Always use the **LINE IN** jacks when driving the BB50-S from the PreOUT jacks of a Preamplifier, SpeakerCraft Control PreAmp, A/V Receiver, etc. (See Diagram 3) Flip the SPEAKER/LINE toggle switch to the **LINE IN** position. (See Diagram 4)

Diagram 3
LINE IN/OUT Jacks

Diagram 4
SPEAKER/LINE
Toggle Switch

(B) SPEAKERS IN Connector (See Diagram 5)

If you wish to use another amplifier's or receiver's speaker outputs as an audio signal source, connect such outputs, using speaker wire, to the (B) SPEAKERS IN Direct Connector. (Refer to Diagram 6)

CAUTION: Please make sure your amplifier or receiver is turned off before proceeding.

For best results, use speaker wire that is at least 18 gauge. For runs longer than 75 feet, 14 gauge wire is recommended.

Wire larger than 14 gauge is not recommended because it may not fit into the connector. For best results, strip all wire insulation no more than ⅜" from the end before inserting into the connector.

1. Removing the Direct Connect terminal from its location on the back of the cabinet will make it easier to connect the wires.

2. Connect the wires from the amplifier's or receiver's speaker outputs to the (B) SPEAKERS IN Direct Connector and then insert it back into its original location. Please observe proper polarity (+ to + and – to –) of the connections.

CAUTION: If the input and output Direct Connectors are reversed, a short could result across the amplifier or receiver output terminals, which may seriously damage your amplifier or receiver. Please double-check all connections before turning on your amplifier or receiver.

Flip the SPEAKER/LINE toggle switch to the SPEAKER IN position. (See Diagram 4)

NOTE: LINE IN and (B) SPEAKERS IN inputs cannot be used simultaneously. Be sure to evaluate the application's needs before making your selection.

Diagram 5
(B) SPEAKERS IN
Connector

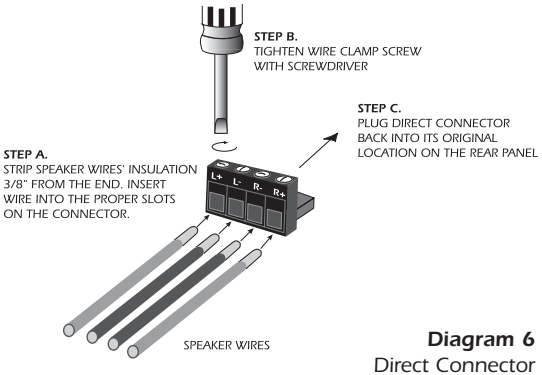


Diagram 6
Direct Connector

LINE OUT Jacks

Preamp Sources connected to the L and R LINE IN *jacks can be passed or "Looped Through" to other preamps or amplifiers by connecting to the corresponding* LINE OUT *jacks, just to the right of each L & R IN jack. Up to 5 SpeakerCraft amplifiers (such as the BB50-S) can be daisy-chained together in this manner.* (See Diagram 3 for jack locations)

VIDEO IN/OUT Jacks

The Video IN *jack is provided for Video triggering purposes only. Use it whenever you wish to have the BB50-S trigger ON and OFF with the powering ON and OFF of a Video source, such as a DVD or VCR. Simply connect the Composite Video OUT of such a component to this* VIDEO IN *jack. You would then flip the Video Trigger toggle switch to the VIDEO ON position to activate the trigger function.* (Refer to Diagrams 7 and 9)

The VIDEO OUT *jack allows you to "Loop" the Video signal through to a Video Monitor or the Video Input of another component, without the need for an external Video splitter or "Y" connector.*

BYPASS ON/OFF Switch

This toggle switch allows you to bypass the L & R Gain Pots located on the front panel. To enable the Gain Pots, set this switch to BYPASS OFF*. To disable them, set it to* BYPASS ON*.* (Refer to Diagram 8)

Diagram 7
VIDEO IN/OUT Jacks

Diagram 8
BYPASS ON/OFF
Toggle Switch

USING THE TRIGGERED INPUTS

The BB50-S permits ON/OFF triggering of its internal amplifier (B Amp) by four different sources. (See Diagram 9) *They can be selected in combination or in groups, as desired. If more than one is selected at a time, the first trigger to go high will turn the BB50-S ON and it will stay ON until the last trigger goes low. The triggers are as follows:*

Diagram 9
TRIGGER Toggle Switches

AUDIO: To activate, flip the AUDIO switch ON. The BB50-S will turn ON when an audio signal appears at the LINE IN or the (B) SPEAKERS IN jacks, depending on which is selected. The audio signal level required for turn ON is set by the front panel SENS adjustment.

When you select LINE IN, the SENS level range is 10mV at full CW to 35mV at full CCW.

When you select (B) SPEAKERS IN, the SENS level range is 135mV at full CW to 470mV at full CCW.

Set the SENS by first rotating it and the DELAY to full CCW positions. If the BB50-S does not switch ON with audio signal playing, rotate the SENS CW a little at a time until it does.

Next, rotate the DELAY CW until you find a place where the BB50-S does not shut OFF and ON too frequently with low music levels or during track and disc changes on CDs, DVDs, etc.

Since the DELAY range is 3 seconds at full CCW and 2.5 minutes at full CW, you should be able to find a good compromise between frequent shut OFFs and too long a time for turn OFF after music ends.

VIDEO: To activate, flip the VIDEO switch ON. The BB50-S will turn ON when a video signal from a DVD, VCR, etc., appears at the VIDEO IN jack. It will turn OFF when the video signal goes off.

DC 12V: To activate, flip the DC 12V switch ON. The BB50-S will turn ON when a DC or AC voltage of 4-24 Volts from a trigger source appears at the 12V DC/AC CONTROL terminals. Refer to Diagram 10. It will turn OFF when the voltage drops below 1 Volt.

Diagram 10
12V DC/AC CONTROL
Trigger Input

AC: *To activate, flip the* AC *switch ON. The BB50-S will turn ON when an AC powered appliance or component of 20 Watts consumption or more is plugged into the 120V AC OUTLET receptacle.* Refer to Diagram 11. *The BB50-S will turn OFF when the AC appliance (i.e. lamp) is turned Off.*

DC 12V TRIGGER OUTPUT

These terminals provide a +12V DC output voltage to trigger other devices. It goes high and stays high whenever the BB50-S internal (B) Amp is triggered ON. (See Diagram 12)

CAUTION: Be sure the external triggered device does not draw more than 100mA total.

Diagram 11
120V AC OUTLET
Trigger Input

Diagram 12
DC 12V 100mA
Trigger Output

SPEAKER TERMINALS

Four sets of speaker terminals are provided on the BB50-S. (See Diagram 13)

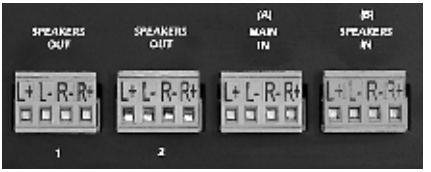


Diagram 13
Speaker Terminals

SPEAKERS OUT 1 & 2

These are the output terminals for the internal stereo (B) amplifier of the BB50-S. They are wired in parallel so that two sets of stereo speakers can be driven, if desired.

CAUTION: When using two sets of speakers, be sure that their total paralleled impedance is not less than 4ohms! *See also "*OPERATING MULTIPLE SPEAKERS*" section, following.*

(A) MAIN IN
These terminals allow a connected external (A) amplifier to play through to the SPEAKERS OUT 1 & 2 output terminals in the absence of a trigger to the internal (B) amp of the BB50-S. This allows A/B amplifier switching based on conditional triggering of the BB50-S.

(B) SPEAKERS IN
For use of these terminals, please refer to page 7.

OPERATING MULTIPLE SPEAKERS

Multiple pairs of speakers can be connected directly to the amplifier's SPEAKERS OUT 1 & 2 outputs (refer to Diagram 13) as long as the total impedance presented to the amplifier does not drop below 4ohms. If excessive demands are placed on the amplifier, the protection circuitry may be engaged, temporarily shutting it down.

When speakers are connected directly to the amplifier, they will all play at the same time. If you wish to control speaker pairs independently of each other, we recommend that you use one of SpeakerCraft's multi-room speaker selectors. Depending on the model, up to eight pairs of speakers can be turned on or off independently of each other, while providing protection for your amplifier at the same time. Your SpeakerCraft dealer can provide you with details on the selectors available.

POWER

3-PRONG REMOVABLE POWER PLUG
Plug the female end of the AC cord supplied with the BB50-S into the IEC-Type receptacle on the rear panel of the amplifier. (See Diagram 2) Insert the plug directly into a 120V AC / 60Hz wall outlet.

CAUTION: Do not plug the amplifier into a preamplifier's or receiver's switched or unswitched outlet. If you wish to have the amplifier turn on once a preamplifier or a receiver is activated, use the "AUDIO ON" trigger mode selection. (Refer to Diagram 9)

120V AC OUTLET
This is an AC current sensing AC Outlet. It is NOT turned On or Off by the front panel POWER switch. Use this outlet to sense the AC current of an AC powered appliance or device for triggering purposes. Refer to Diagrams 9 and 11 and related text for details.

FRONT PANEL OPERATIONS

Refer to Diagram 1 for the locations of the following:

POWER Switch
The POWER switch must be turned ON for the TRIGGER modes to operate. It will also turn OFF all amplifier circuitry no matter which TRIGGER mode is selected. Refer to Page 8 for further trigger information.

ACTIVE LED
When lit, the ACTIVE LED indicates that POWER has been applied to the amplifier. The internal (B) amplifier of the BB50-S will not operate until triggered on by one of the TRIGGER inputs. Refer to "USING THE TRIGGERED INPUTS" section for further information.

"A" LED
When lit, the "A" LED indicates that an external Main Amplifier (A) is playing, if connected and operating through the (A) MAIN IN connector on the rear panel. The internal (B) amp of the BB50-S will be Off.

"B" LED
When lit, the "B" LED indicates that the internal (B) amp of the BB50-S is triggered ON. An external Main Amplifier (A), if connected through the (A) MAIN IN connector on the rear panel, will be Off.

DELAY & SENS ADJUSTMENT POTS
These adjustments set Delay and Sensitivity parameters when the BB50-S operates with AUDIO trigger (only). See AUDIO description and Diagram 9 under "USING THE TRIGGERED INPUTS" section for details.

L & R LEVEL ADJUSTMENT POTS
These Level Adjustment Pots are used to adjust the level of the amplifier output so that you can match the output levels of other amplifiers in your system.

Use them also to set a maximum level in multi-rooms, so that speaker volume controls and wall speakers in the remote rooms cannot be overdriven and damaged.

Use a small slotted screwdriver for adjustment. If you do not use them for these purposes, it is best to leave the adjustments at their factory default position (turned fully clockwise).

TROUBLESHOOTING

The BB50-S is designed to function trouble-free. Most problems occur because of operating errors. If you have a problem, please check the troubleshooting list first. If the problem persists, please call 1-800-448-0976 or e-mail us at techsupport@speakercraft.com.

The Problem	Possible Causes and Solutions
No sound heard	Audio cable to the source component is not connected properly or the cable is bad. Try another cable that you know is good.
No sound heard from one side	The speaker wires or audio cables are not wired correctly or are bad. The front mounted level adjustment on one side is turned all the way down. A speaker is not working. Make sure by connecting the channel to a speaker that you know to be working.
Hum or buzzing sound is heard	The sound may be caused by a ground loop in the system. Try to eliminate this by reversing the AC plugs of other components in the system. Other causes may include faulty cables.
Amplifier will not turn on	The amplifier must be plugged into a live outlet. The power switch on the front panel must be on. One of the TRIGGER inputs must be switched ON and the trigger source operating (high).

BB50-S SPECIFICATIONS

Power Output
50 Watts per channel RMS into 8ohms
65 Watts per channel RMS into 4ohms

Total Harmonic Distortion
0.08% 20Hz to 20kHz into 8ohms
0.1% 40Hz to 20kHz into 4ohms

Input Sensitivity
1.0V for rated output into 8ohms (R & L Input Level Adjustments set Full CW)

Input Impedance
33K @ Line Inputs

Audio Trigger Sensitivities & Delays
Sens Full CW: 10mV (Line IN), 135mV (B Speakers IN)
Sens Full CCW: 35mV (Line IN), 470mV (B Speakers IN)
Delay Full CW: 2½ Minutes
Delay Full CCW: 3 Seconds

Video Trigger
Triggers ON/OFF with presence or absence of composite video

12V DC/AC Control IN
Trigger ON Range: 4V Min. to 24V Max.
Trigger OFF Threshold: <1V

AC Power Trigger
Trigger Level: 20 Watts Min. loading at AC Outlet

12V DC OUT
Output Current: 100mA Max.
Switches ON/OFF with any Trigger ON/OFF

AC Outlet
500 Watts Max., 120V AC

Power Consumption
230 Watts @ 120V AC, 60Hz (all channels driven to rated power @ 8ohms)

Dimensions
(W) 17" x (H) 4" x (D) 8½" (including rear panel connectors)

Weight
12 lbs

LIMITED TWO-YEAR WARRANTY

SpeakerCraft Inc. warrants to the original retail purchaser **only** that this SpeakerCraft product will be free from defects in materials and workmanship for a period of two years, provided the product was purchased from a SpeakerCraft Authorized Dealer.

Defective products must be shipped, together with proof of purchase, prepaid insured to the SpeakerCraft Authorized Dealer from whom they were purchased, or to the SpeakerCraft factory at the address listed on this installation instruction manual. Freight collect shipments will be refused. It is preferable to ship this product in the original shipping container to lessen the chance of transit damage. In any case, the risk or loss or damage in transit is to be borne by the purchaser. If, upon examination at the Factory or SpeakerCraft Authorized Dealer, it is determined that the unit was defective in materials or workmanship at any time during this warranty period, SpeakerCraft or the SpeakerCraft Authorized Dealer will, at its option, repair or replace this product at no additional charge, except as set forth below. If this model is no longer available and can not be repaired effectively, SpeakerCraft, at its sole option may replace the unit with a current model of equal or greater value. In some cases where a new model is substituted, a modification to the mounting surface may be required. If mounting surface modification is required, SpeakerCraft assumes no responsibility or liability for such modification. All replaced parts and product become the property of SpeakerCraft Inc. Products replaced or repaired under this warranty will be returned to the original retail purchaser, within a reasonable time, freight prepaid.

This warranty does not include service or parts to repair damage caused by accident, disaster, misuse, abuse, negligence, inadequate packing or shipping procedures, commercial use, voltage inputs in excess of the rated maximum of the unit, or service, repair or modification of the product which has not been authorized or approved by SpeakerCraft. This warranty also excludes normal cosmetic deterioration caused by environmental conditions. This warranty will be void if the Serial number on the product has been removed, tampered with or defaced.

This warranty is in lieu of all other expressed warranties. If the product is defective in materials or workmanship as warranted above, the purchaser's sole remedy shall be repair or replacement as provided above. In no event will SpeakerCraft be liable for any incidental or consequential damages arising out of the use or inability to use the product, even if SpeakerCraft Inc. or a SpeakerCraft Inc. Authorized Dealer has been advised of the possibility of such damages, or for any claim by any other party. Some states do not allow the exclusion or limitation of consequential damages, so the above limitation and exclusion may not apply.

All implied warranties on the product are limited to the duration of this expressed warranty. Some states do not allow limitation on the length of an implied warranty. If the original retail purchaser resides in such a state, this limitation does not apply.

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